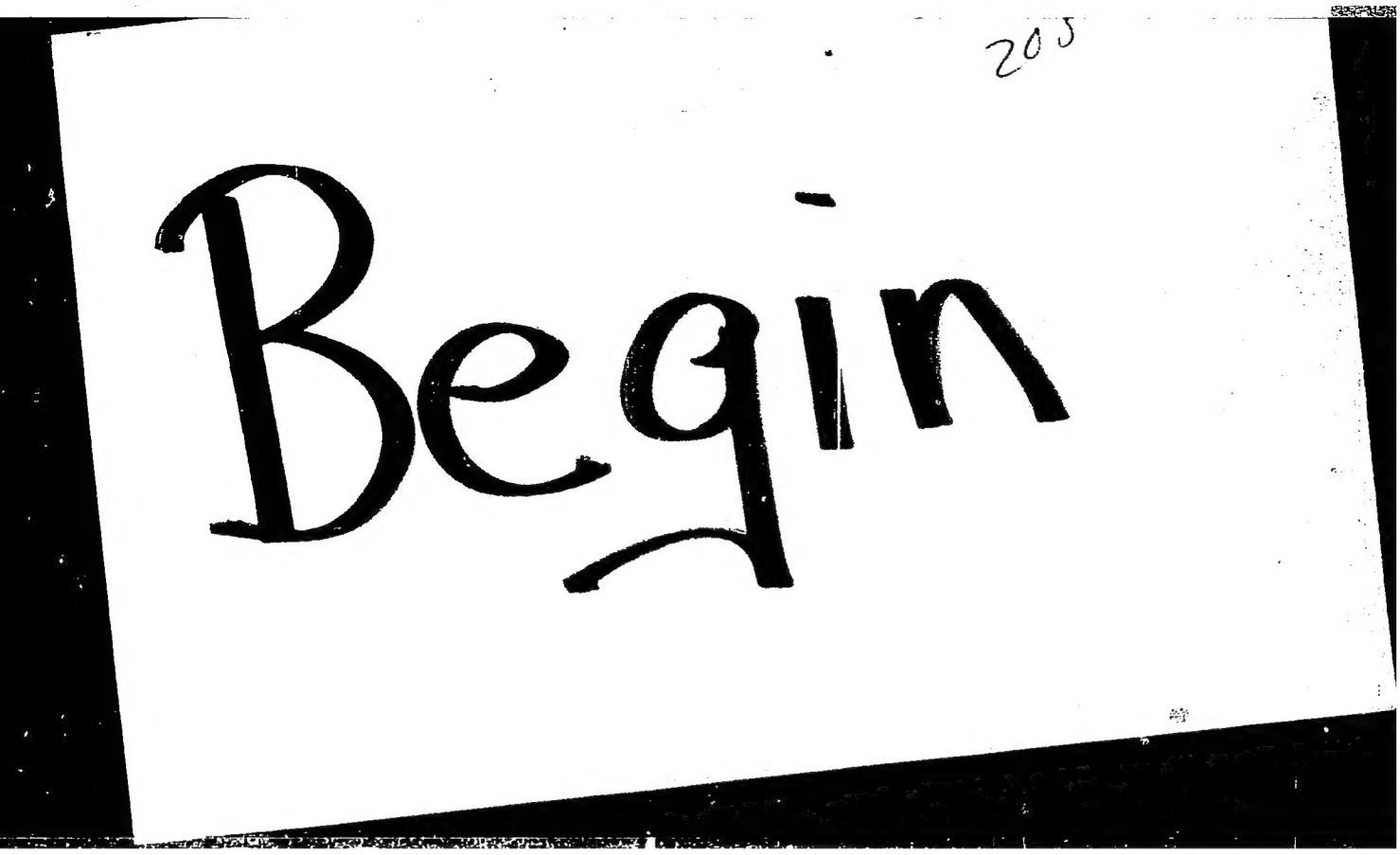
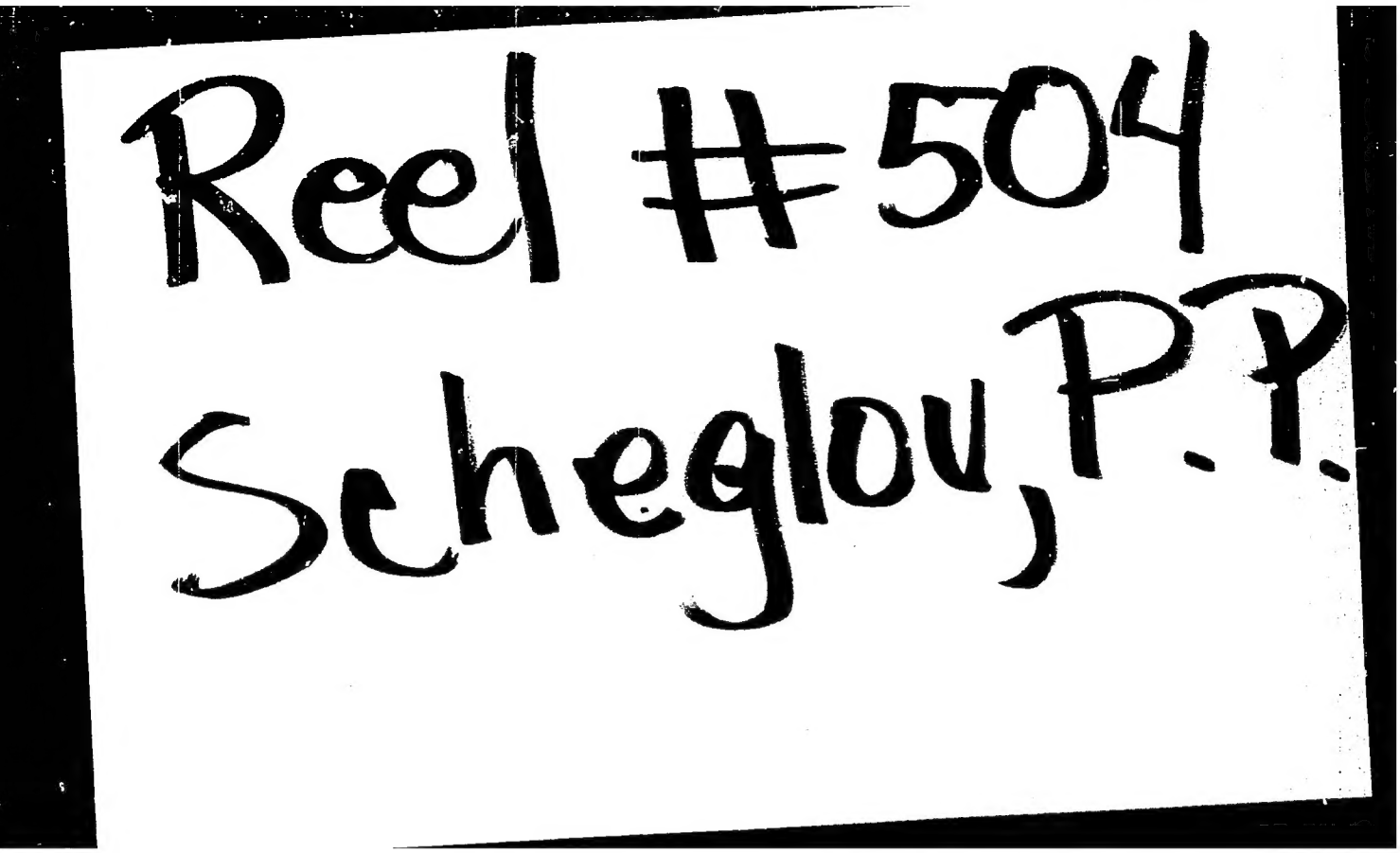




1. [illegible]

2. USSR (600)

4. Kuznetsk Basin - Strip Mining

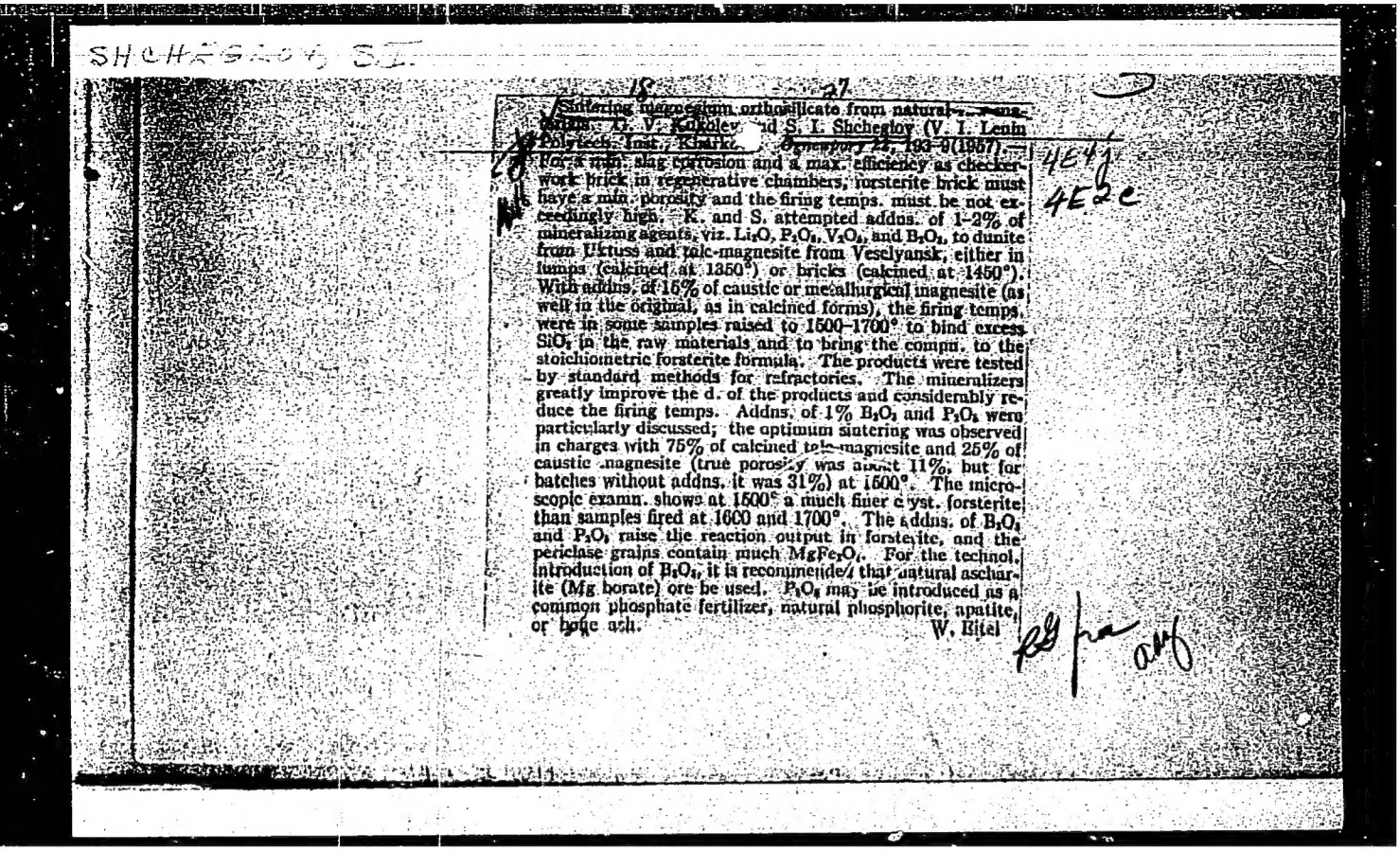
7. Working a steeply-inclined major seam at the Krasnobrodskiy open pit mine of the Kuznetsk Basin. Ugol' 28, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

SHCHEGLOV, S. I.

SHCHEGLOV, S. I.: "A study of the processes of sintering forsterite refractory materials in connection with data on phase equilibria". Kharkov, 1955, Min Higher Education Ukrainian SSR. Khar'kov Polytechnic Inst imeni V. I. Lenin. (Dissertation for the Degree of Candidate of TECHNICAL Sciences)

SO: Knizhnaya Letopis' No. 51, 10 December 1955



SHCHEGLOV, S.I.

18 27

Sintering magnesium orthosilicate from natural [illegible] materials. K. V. Kolesov and S. I. Shcheglov (V. I. Lenin Polytech. Inst., Kharkov). *Ogneupory* 32, 193-9(1967).—For a min. slag corrosion and a max. efficiency as checker-work brick in regenerative chambers, forsterite brick must have a min. porosity and the firing temps. must be not exceedingly high. K. and S. attempted addns. of 1-2% of mineralizing agents, viz. Li_2O, P_2O_5, V_2O_5, and B_2O_3, to dunite from Uktuss and talc-magnesite from Veselyansk, either in lumps (calcined at 1350°) or bricks (calcined at 1450°). With addns. of 15% of caustic or metallurgical magnesite (as well in the original, as in calcined forms), the firing temps. were in some samples raised to 1500–1700° to bind excess SiO_2 in the raw materials and to bring the compn. to the stoichiometric forsterite formula. The products were tested by standard methods for refractories. The mineralizers greatly improve the d. of the products and considerably reduce the firing temps. Addns. of 1% B_2O_3 and P_2O_5 were particularly discussed; the optimum sintering was observed in charges with 75% of calcined talc-magnesite and 25% of caustic magnesite (true porosity was about 11%, but for batches without addns. it was 31%) at 1600°. The microscopic examn. shows at 1500° a much finer cryst. forsterite than samples fired at 1600 and 1700°. The addns. of B_2O_3 and P_2O_5 raise the reaction output in forsterite, and the periclase grains contain much $MgFe_2O_4$. For the technol. introduction of B_2O_3, it is recommended that natural ascharite (Mg borate) ore be used. P_2O_5 may be introduced as a common phosphate fertilizer, natural phosphorite, apatite, or bone ash.

W. Eitel

4E41
4E2c

AUTHORS: Kuleley, G.V. and Kucheglov, P.I. SOV/80-33-1-[illegible]

TITLE: On the Role of the Liquid Phase in Sintering Forsterite Refractory Materials (O roli zhidkoy fazy v spekanii forsteritovykh ogneuporov)

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 1, pp 36-45 (USSR)

ABSTRACT: The authors investigated the sintering process of forsterite refractory materials in connection with the data on phase equilibria. The following systems were investigated: $MgO-SiO_2$; $MgO-Al_2O_3-SiO_2$; $MgO-CaO-SiO_2-CaO.Al_2O_3.2SiO_2$ and $Na_2O-MgO-SiO_2$. The degree of sintering was determined by the change in volumetric weight, apparent and true porosity, and the ultimate strength of the samples under compression. The viscosity of the smelt and the surface tension were determined by the method developed by Vermolayeva in the All-Union Scientific Research Institute of Refractory Materials in Khar'kov. The effect of several additions was investigated at various temperatures. It turned out that additions of V_2O_5, B_2O_3, P_2O_5 and Li_2O improved the sintering in the $MgO-SiO_2$ systems. In other systems the effect of additions was less pronounced. Additions which improve sintering lower the viscosity and surface tension of the smelt.
There are 5 graphs, 1 diagram, 1 table and 22 Soviet references.

Card 1/2

[illegible]

[illegible] the Role of the Liquid Phase in Obtaining Forsterite Refractory Materials

[illegible]: Kharkovskiy politekhnicheskiy institut imeni V.I. Lenina (Kharkov Polytechnic Institute imeni V.I. Lenin)

[illegible]: May 4, 1957

Card 2/2

S/081/60/000/020/009/014
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 20, p. 339, # 81775

AUTHORS: Kukolev, G.V., Shcheglov, S.I.

TITLE: The Effect of Melt Properties on the Sintering of Forsterite in Various Systems

PERIODICAL: Tr. Khar'kovsk. politekhn. in-ta, 1959, Vol. 31, No. 1, pp. 25-35

TEXT: A study was made of changes in viscosity and surface tension of melts depending on the content of various oxides in the melt such as Al_2O_3, CaO SiO_2, MgO, Na_2O, and of the effect on the properties of these melts of the additional introduction of V_2O_5, P_2O_5, B_2O_3 and Li_2O. Viscosity was determined by measuring the damping angles of rotary oscillations of a body suspended by a string and submerged to a given depth into the melt to be investigated. The surface tension of the melts was determined by calculation according to data and a method given by A.A. Appen (Zh. fiz. khim., 1952, Vol. 16, No. 8). The study shows that the addition of oxides such as Al_2O_3, CaO as third components, and of V_2O_5, B_2O_3, P_2O_5 and Li_2O into the mixtures of the MgO - SiO_2 system, reduces the

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S/081/60/000/020/009/014
A006/A001

The Effect of Melt Properties on the Sintering of Forsterite in Various Systems

viscosity of the melt and improves sintering. At the same time, although viscosity of melts of the Na_2O-MgO-SiO_2 system is higher than in the aforementioned systems, they are easier sintered since the surface tension decreases considerably with an increased viscosity. It is established that a most marked improvement of sintering when adding admixtures to equilibrium melts, is observed in the case when the admixtures reduce simultaneously both viscosity and the surface tension of the melts.

G. Gerashchenko

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

S/137/60/000/010/003/040
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960,No.10, p. 8, # 22432

AUTHORS: Kukolev, G.V., Shcheglov, S.I.

TITLE: The Effect of Melt Properties on the Sintering of Forsterite in Various Systems

PERIODICAL: Tr. Khar'kovsk. politekhn. in-ta, 1959, Vol. 31, No. 1, pp. 25-35

TEXT: The authors carried out an experimental investigation of the viscosity and surface tension of melts, which arise during roasting of the work pieces and may be in an equilibrium with forsterite, depending on the content in the melt of Al_2O_3, CaO, SO_2, MgO, Na_2O and of admixtures of V_2O_5, P_2O_5, B_2O_3 and Zi_2O. With an increased content in the melt of Al_2O_3 and CaO, viscosity decreases and the sintering capacity is raised. All admixtures reduce viscosity. The sintering capacity of forsterite increases sharply when the admixture is simultaneously reducing both viscosity and surface tension. There are 11 references. N.M.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

SHCHEGLOV, S.I

Modern equipment for oil fields. NTO 2 no.1:52 Ja '60.
(MIRA 13:5)

1. Predsedatel' soveta porvichnoy organizatsii Nauchno-tekhnicheskogo obshchestva nefteppromyslovogo upravleniya "Chapayevskneft'," Kuybyshevskaya oblast.
(Chapayevsk--Oil fields--Equipment and supplies)

SHCHEGLOVA, M.D.; PODGORNYY, A.N.; SHCHEGLOV, S.I.

Strength and changes in the strength of grog refractories under the effect of heating up to 1500°. Izv.vys.ucheb.zav.; chern.met., 4 no.6: 164-167 '61. (MIRA 14:6)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.
(Refractory materials—Testing)

44354

S/131/62/000/012/004/004
B117/B186

15.2200

AUTHORS: Shcheglova, M. D., Shcheglov, S. I.

TITLE: Strength of some refractories at high temperatures

PERIODICAL: Ogneupory, no. 12, 1962, 566 - 567

TEXT: The compressive strength, σ_{compr}, of certain refractories was determined between 20 and 1600°C (at intervals of 100 - 200°C). The samples were of clay from three sources, namely: dinas from the dinasovyy zavod im. Dzerzhinskogo (Dinas Plant imeni Dzerzhinskiy), fire clay from the Zaporozhskiy ogneupornyy zavod (Zaporozh'ye Refractory Plant), and forsterite from the Panteleymonovskiy ogneupornyy zavod im. K. Marksa (Panteleymonovka Refractory Plant imeni K. Marx). Upon heating the strength of the cylindrical test samples at first decreased noticeably to 15 - 25% of the σ_{compr} at room temperature. Maximum reduction in compressive strength was observed at 250 - 600°C for dinas, at 500 - 600°C for fire clay, and at 100 - 200°C for forsterite samples. Further increase in temperature leads to an increase in compressive strength, with maximum

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SHCHEGLOVA, M.D.; SHCHEGLOV, S.I.

Strength of certain refractories at high temperatures.
Ogneupory 27 no.12:566-567 '62. (MIRA 15:12)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut im. F.E. Dzerzhinskogo.
(Refractory materials--Testing)
(Materials at high temperatures)

SHCHEGLOV, S.I.; ZAIKIN', V.D.

Effect of technological factors on the compaction of raw forsterite materials. Ogneupory 28 no.7:323-327 '63.(MIRA 16:9)

1. Dnepropetrovskiy metallurgicheskiy institut.

AUTHOR: Shcheglov, S. I., Engineer (Noril'sk) SOV/67-58-4-27/29

TITLE: Conditions for the Use of Liquid Oxygen Without Danger (Usloviya bezopasnogo primeneniya oksilikvitov)

PERIODICAL: Kislorod, 1958, Nr 4, p 47 (USSR)

ABSTRACT: In his introduction to this article the author says that the above mentioned explosive is at present being used in mining in France, China, and in the USA, and that, for example, for nine-tenth of the blasting work carried out in the mines of Lorraine liquid oxygen was used. Some years ago it was also widely used in the mining district of Noril'sk in the USSR. The Soviet scientists A. D. Yakhontov, Yu. N. Zinyuk and K. I. Ivanov worked on this problem in detail (1942-1954) in a special laboratory. Nevertheless, use of this explosive was stopped (for reasons not mentioned in this article) in the USSR. The author expresses his regret because this "inexpensive and efficacious" explosive is no longer being used in the USSR, but he adds that this is due to the danger its application entails, especially because of frequent premature explosions. The author furthermore refers to a publication dealing with this problem by P. V. Orlov, collaborator of the laboratory

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of Blasting-Work in Mines of the Mining Institute AS USSR, in which the precautions to be taken when using this explosive are dealt with in detail. The said author is praised especially for having proved that several of these precautions were both expensive and wrong. This refers particularly to the theory of electrostatic discharges in the oxygen dust cloud, which were alleged to be the cause of accidents. According to Orlov an electrostatic discharge would be possible only if in the bore and with a concentration of dust in the absorber of not less than 20 mg/l a metal object should happen to get into the bore and might, after having become electrified, generate a spark.

1. Oxygen (Liquid)—Hazards 2. Oxygen (Liquid)—Applications
3. Oxygen (Liquid)—Safety measures

14(8) 14(1) SOV/67-59-3-11/27

AUTHOR: Shcheglov, S. L., Engineer

TITLE: Signalling Device for the Filling of an Elastic Gas Container (Signalizator napolneniya myagkogo gazgol'dera)

PERIODICAL: Kislorod, 1959, Nr 3, p 40 (USSR)

ABSTRACT: The worker in the oxygen plant of the town of Noril'sk, N. I. Sidorov, developed the signalizer mentioned in the title. In principle it consists of a thin brass plate with a rod, welded vertically to the plate. This plate is applied to the gas balloon. The rod is introduced into a spiral spring to which a lever is applied. When the balloon is filled and an excess pressure occurs the rod exercises a pressure on the spiral with the lever which closes a contact with a signalling device and a lamp. The bell may be switched off. This signalizing device is successfully used in the mentioned oxygen plant already for three years. There is 1 figure.

Card 1/1

SOV/67-59-4-10/19

52(2)

AUTHOR: Shcheglov, S. L., Engineer

TITLE: Centralized Oxygen Transportation

PERIODICAL: Kislorod, 1959, Nr 4, pp 41-44 (USSR)

ABSTRACT: The centralized oxygen transportation system introduced in Noril'sk in 1956 proved to be much more convenient compared to the non-centralized system. Trained personnel and very careful planning resulted in considerable savings in working time and fuel for the vehicles. The four-ton trucks of the type ZIL-150 used for oxygen transportation since 1957 are loaded to an average of 80% of their capacity. They are capable of transporting 39-40 oxygen cylinders, whereas the seven-ton trucks operated before April 1957 could be used to transport only 50 cylinders of types A-40 and A-50 with 80 kg of oxygen each, corresponding to only 57% of their load capacity. Tables are given showing transportation data over the months of 1957-1958, and the degree of centralization is specified. Referred to 1958, it amounts to an average 93.2%. Owing to specialized personnel training and appropriate safety measures that are possible only in a centralized transporta-

Card 1/2

tion system, the number of labor accidents has dropped considerably. Since loading and unloading of oxygen containers is still done manually, at least partial mechanization of these operations would be very welcome. Efforts in this direction are being made. There are 2 tables.

SHCHEGLOV, S. M.

PA 190T84

USSR/Medicine (Veterinary) - Toxins of Parasites Nov 51

"Experimentally Produced Colics in Horses," Ye. I. Skalinskiy, Aspirant, S. M. Shcheglov, Jr Sci Assoc, All-Union Inst of Expt Vet Med

"Veterinariya" Vol XXVIII, No 11, pp 57, 58

Toxin isolated from Delafondia vulgaris larvae obtained from infected horses was tested on isolated hearts and ears of rabbits and isolated ears of horses. Effect of various doses of the toxin on arterial pressure of horses and dogs was investigated. Results indicate that toxin has very strong

190T84

USSR/Medicine (Veterinary) - Toxins of Parasites (Contd) Nov 51

action on the central nervous system and peripheral nerve endings. Toxic effects comprise violent peristaltic and antiperistaltic intestinal movements, spasms of smooth muscles of the intestine, and general depression. Intravenous injection of toxin from a single larva produces strong colics in horses. Autopsy on mare 3 hr after poisoning disclosed turning and infarct of both small and large intestine.

190T84

SHCHEGLOV, S.M.

Using albumin fraction of the bone marrow in making organic preparations. Izobr.v SSSR 3 no.1:6-9 Ja '58. (MIRA 11:1)
(MARROW) (PHARMACOLOGY)

ACCESSION NR: AP4013650 P/0058/63/028/001/0083/0089

AUTHOR: Szczeglow, S. M. (Shcheglov, S. M.)

TITLE: Some therapeutic and prophylactic measures in post-irradiation complications

SOURCE: Polski przeglad radiologii i medycyny nuklearnej, v. 28, no. 1, 1964, 8

TOPIC TAGS: irradiation prophylaxis, irradiation therapy, liver preparation, marrow preparation, hemopoietic stimulator, radiology pharmaceutic

ABSTRACT: Dry (sublimation) preparations of adult (WW) and embryonic (WWE) cattle livers in powdered form for oral administration, prepared by the author and A. I. Niewiezina, were tested clinically under the direction of Profs. N. A. Kurszakov [Kurshakov], A. A. Kanariewska [Kanarevskaya], and P. M. Kiriejew [Kiriyev]. The study covered 65 patients with asthenic-vegetative syndrome, half receiving tested preparations only, and others with supplements of vitamin B12, nucleic acids, and blood transfusions. Good results, obtained especially in cases of 1st and 2nd degree of disease, manifested themselves in the rise of the fraction of granular leukocytes,

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ACCESSION NR: AP4013650

reticulocytes, erythrocytes, and the overall number of marrow cells. It was concluded that the preparations are effective in the prophylaxis and treatment of post-irradiation diseases, especially those affecting the hemopoietic system. From protein fractions of cattle bone marrow the author also prepared an erythropoiesis-stimulating preparation (PSE), in powdered form for internal and in liquid form for intramuscular administration, reported effective in cases of acute post-irradiation illness. A powdered preparation was tested on mice in 3 groups: I (25) - receiving preparation both before (0.1 g, 5 times a day for a week) and after (0.1 g for 45 days, skipping every third day) single exposure (250 r); II (26) - only after exposure; and II (27) - control. The experiments proved that the preparation was an effective prophylactic, prevented cachexia, caused a milder course of disease and lesser disturbances in blood picture and Biernacki reaction, and showed lower mortality; and that therapeutic administration speeded recovery. These findings were subsequently confirmed in clinical tests on humans, where the preparation proved effective where other methods failed, leading the researchers to the conclusion that it stimulates not only hemopoiesis but also the resistance of the system. They therefore recommend it (dose: 2g 2-3 times daily before meals for therapy and 5-8 g 10-15 days prior to exposure for prophylaxis) for

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ACCESSION NR: AP4013650

prophylaxis and treatment of all disturbances connected with hemopoiesis, especially in acute and chronic cases of post-irradiation disease. Studies on parenteral administration will follow. Orig. art. has: 3 graphs.

ASSOCIATION: Third State Scientific and Research Oncology Institute imeni P. A. Gertsena in Moscow.

SUBMITTED: 09Feb63 DATE ACQ: 03Mar64 ENCL: 00

SUB CODE: AM, NS NO REF SOV: 023 OTHER: 003

Card 3/3

88830

S/035/61/000/002/016/016
A001/A001

3.9000(1041, 1109, 1327)

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1961, No. 2, p. 32, 20234

AUTHORS: Dobrokhotov, Yu.S., Ivanova, M.V., Shcheglov, S.N.

TITLE: The Gravimetric Polygon at the Moscow State University

PERIODICAL: V sb.: "Gravometr. issledovaniya", No. 1, Moscow, AN SSSR, 1960, pp. 57 - 60 (Engl. summary)

TEXT: The Institut fiziki Zemli (Irstitute for Physics of the Earth) at AS USSR acquired four GS-11 gravimeters (## 124, 126, 134 and 135) designed for measuring tidal variations of gravity. For the control gaging of these gravimeters, a gravimetric polygon was established in the MGU building at the Leninskiye gory (Lenin Mountains); the polygon consisted of four points located in the basement, 8th, 18th and 28th stories. A freight elevator was used for transporting gravimeters. Standard values of Δ g were determined with nine gravimeters [A]-3 (GAE-3), observed in nine routes of the sequence 0-8-18-28-18-8-0. Duration of the route did not exceed 1 hour. The root-mean-square error of one measurement with the

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88830

S/035/61/000/002/016/016
A001/A001

The Gravimetric Polygon at the Moscow State University

GAE-3 gravimeter was equal to ± 0.42 mgal; the weight of such a measurement was adopted to be unity. Measurements with GS-11 gravimeters were performed in five routes of the sequence 0-8-18-28-18-8-0. The duration of one route seldom exceeded 1 hour. The root-mean-square error of one measurement with the GS-11 gravimeter was equal to ± 0.06 mgal; the weight was adopted to be 50. The standard values of Δg and coefficients of GS-11 gravimeters were determined from the joint adjustment of measurements with gravimeters GAE-3 and GS-11. The relative error in coefficients did not exceed 0.14%, and differences with the data of the firm did not exceed 0.11%. The adjusted values of Δg relative to the 28th story turned out to be (in mgal): for the basement +40.046 ± 0.053; for the 8th story +28.559 ± 0.038, and for the 18th story +15.899 ± 0.023.

P. Shokin

Translator's note: This is the full translation of the original Russian abstract.

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Chronicle

Card 4/6

Card 5/6

Card 6/6

S/035/62/000/004/028/056
A001/A101

AUTHOR: Shcheglov, S. N.

TITLE: Height determination by the method of geodetic leveling along the Mirnyy-Komsomol'skaya route

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 4, 1962, 1, 46G ("Inform. byul. Sov. antarkt. ekspeditsii", 1961, no. 28, 37-41)

TEXT: The author describes geodetic works carried out by the gravimetric team of the Fourth Antarctic Expedition along the profile from Mirnyy to Komsomol'skaya, as well as equipment and instruments used (See RZhAstr, 1961, 11G1). Heights of 259 points of the route were determined by the geodetic leveling method. The heights at stations Pionerskaya, Vostok-I and Komsomol'skaya, obtained by geodetic leveling, differ from those determined by aerological leveling by the Second Continental Expedition, on an average by - 60 m (except for Pionerskaya), and from those determined by the Third Expedition by approximately + 80 m.

I. Mityachkin

[Abstracter's note: Complete translation]

Card 1/1

S/169/61/000/012/012/089
D228/D305

AUTHOR: Shcheglov, S. N.

TITLE: The geodetic and gravimetric work of the fourth composite Antarctic expedition on the universal journeys of the "Pingvin"

PERIODICAL: Referativnyy zhurnal, Geofizika no. 12 1961, 31, abstract 12A210 (Mezhdunar. geofiz. god. Inform. byul., 1961, no. 9, 7-16)

TEXT: Gravimetric determinations at 72 points on the Mirnyy-Komsomol'skaya profile were fulfilled by means of four GS-3 (SN 3) gravimeters. The gravimeters were adjusted for negative-temperature operating conditions. On an average, the observations were made on the traverse every 10 km. A graph of gravity anomalies in the free air on the Mirnyy-Komsomol'skaya profile was obtained. [Abstracter's note: Complete translation.]

Card 1/1

[redacted], P., [redacted], V.

We are working in close cooperation. Rech. transp. 24 no.2:16 '65.
(MIRA 18:9)

1. Zamestitel' nachal'nika Omskogo porta (for [redacted]). 2. Zamestitel' nachal'nika gruzovogo otdela Omskogo otdeleniya zheleznoy dorogi (for Shcheglov).

L 36815-66 EWP(j)/EWT(m) RM

ACC NR: AP6004220 (A) SOURCE CODE: UR/0331/65/000/009/0011/0013

18
B

AUTHOR: Yelukov, A.; Shcheglov, V.

ORG: TsNIIMOD

TITLE: Baled lumber in maritime shipping

SOURCE: Lesnaya promyshlennost', no. 9, 1965, 11-13

TOPIC TAGS: transportation equipment, ocean transportation, packaging machinery

ABSTRACT: The advantages of shipping baled lumber and the economies in labor productivity in loading and unloading operations are described. While the shipment of baled lumber has proved to be efficient and economical, it is not commonly practiced in the Soviet Union owing to the lack of baling machinery, ships equipped to handle the baled cargo, enclosed warehouses, and mechanized dock facilities. The technical parameters of a new lumber baling machine which will be manufactured by the Petrozavodsk Machine Tool Plant are presented in detail. The authors note that rail shipments of baled lumber are made on flatcars and urge the development of special railroad cars which will protect the lumber from the elements. Orig. art. has: 2 figures.

SUB CODE: 13,14/ SUBM DATE: none

UDC: 634.0.378.8

Card 1/1

30679

S/141/61/004/004/008/024
E032/E514

9,25 74(1055, 1163)

AUTHOR: Shcheglov, V. A.

TITLE: The use of a ring-capacitor separator in a maser

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1961, Vol.4, No.4, pp.648-655

TEXT: A. F. Krupnov (Ref.1: Izv.vyssh.uch.zav. Radiofizika, 2,658, 1959) has suggested the use of a ring-capacitor separator instead of a quadrupole separator. However, Krupnov did not give an analysis of the ring-capacitor. The necessary analysis is given in the present paper. The problem is formulated as follows (Fig.1). The separator consists of a large number of coaxial metal rings at potentials $+\varphi_0$, $-\varphi_0$, $+\varphi_0$ etc. The derivation of the field in the separator can be reduced to the determination of the potential function which satisfies the Laplace equation and has the values $\pm\varphi_0$ at the surfaces of the rings. In the present paper the potential function is expanded into a Fourier series whose amplitudes are determined by integrating the Laplace equation. The final expression is

$$\varphi(\rho, z) = \sum_{n=0}^{\infty} A_n I_0\left[(2n+1)\pi\rho/\ell\right] \sin\left[(2n+1)\pi z/\ell\right] \qquad (7)$$

Card 1/3

where

$$I_0(x) = \sum_{s=0}^{\infty} (x/2)^{2s}(s!)^{-2} \qquad (8)$$

The coefficients A_n for a potential satisfying the boundary conditions are very difficult to determine. They are, therefore, determined approximately by assuming that the boundary conditions are satisfied not everywhere but only at a finite number of points and assuming that the ring thickness is small. Having determined the potential function in this way the field is found to be

$$E = \left[\left(\frac{\partial\varphi}{\partial\rho}\right)^2 + \left(\frac{\partial\varphi}{\partial z}\right)^2\right]^{1/2} = 0.3\pi \frac{U_0}{\ell}\left\{\left[2\frac{I_1(\pi\rho/\ell)}{I_0(\pi\rho_0/\ell)}\sin\frac{\pi z}{\ell} + \right.\right.$$

$$\left. + \frac{I_1(3\pi\rho/\ell)}{I_0(3\pi\rho_0/\ell)}\sin\frac{3\pi z}{\ell}\right]^2 + \left[2\frac{I_0(\pi\rho/\ell)}{I_0(\pi\rho_0/\ell)}\cos\frac{\pi z}{\ell} + \frac{I_0(3\pi\rho/\ell)}{I_0(3\pi\rho_0/\ell)}\right.$$

$$\left.\left. \cos\frac{3\pi z}{\ell}\right]^2\right\}^{1/2} \qquad (11)$$

Card 2/3

where $I_1(x)$ is the first order Bessel function of an imaginary argument. The electric-field analysis is then applied to an approximate theory of the two-level maser. Expressions are obtained for the energy of interaction of a molecule with the field of the separator and for the number of "active" molecules produced thereby. The angle of capture and the length of the system which is necessary for efficient separation are also computed. The theory is then applied to the special case of the maser at the Physics Institute of the Academy of Sciences imeni P. N. Lebedev (Fizicheskiy institut imeni P. N. Lebedeva AN SSSR)which incorporates this type of ring separator. Acknowledgments are expressed to A. N. Orayevskiy for assistance in this work. There are 3 figures and 5 references: all Soviet (2 translations from English).

ASSOCIATION: Moskovskiy fiziko-tekhnicheskiy institut (Moscow Physico-Technical Institute)

SUBMITTED: December 22, 1960

ACCESSION NR: AP4017045 S/0141/63/006/006/1275/1279

AUTHOR: Shcheglov, V. A.

TITLE: Maser with two cavity natural modes

SOURCE: IVUZ. Radiofizika, v. 6, no. 6, 1963, 1275-1279

TOPIC TAGS: maser, molecular generator, maser cavity, maser cavity natural mode, maser with two modes, two cavity modes, maser material equations, maser harmonic oscillations, maser oscillation stability

ABSTRACT: The general maser equations are modified by inclusion of material equations for a system in which the direction of the electric vector is not fixed in space, as is customarily done, but is time-varying in a fixed plane only. The case when the emission frequency is close to two natural modes of the cavity is considered, and the analysis is limited to an emission spectral-line width much smaller than the width of the resonance line of each of the cavity

Card 1/3

ACCESSION NR: AP4017045

modes. The stationary harmonic oscillations of a maser with the two cavity modes are then determined by the Van-der-Pol method. The system is found to have both fast and slow cycles in phase space, the slow cycles being orbitally stable. "The author is grateful to N. G. Basov and A. N. Orayevskiy for help and interest in the work, and also to V. N. Lugovoy for useful advice." Orig. art. has: 18 formulas and 1 figure.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 31Jan63 DATE ACQ: 18Mar64 ENCL: 01

SUB CODE: PH, SD NO REF SOV: 008 OTHER: 000

Card 2/2

L 49432-65 EWA(k)/FBD/EWG(r)/EWT(l)/EEC(k)-2/EEC(t)/T/EEC(b)-2/EWP(k)/EWA(m)-2/EWA(h) Pi-4/Pi-4/Pl-4/Pm-4/Pn-4/Po-4/Peb SCTB/IJP(c) WG

ACCESSION NR: AP5010680 UR/0141/65/008/001/0081/0090

62
61
B

AUTHOR: Orayevskiy, A. N.; Shcheglov, V. A.

TITLE: Natural modes of dielectric-filled quantum optical resonators

SOURCE: IVUZ. Radiofizika, v. 8, no. 1, 1965, 81-90

TOPIC TAGS: solid laser, natural mode, laser cavity, laser loss

25

ABSTRACT: The authors investigate the natural modes of a plane dielectric layer located between infinite ideally level absolutely conducting planes, and of a round dielectric cylinder located between two infinite planes, with the aim of using the results to determine the electrodynamic properties of open resonators filled with a dielectric. The quantities calculated are the transverse wave numbers, the natural frequencies, the values of Q of the different modes, and the number of modes in a specified spectral interval. The losses in the material and in the resonator walls are also calculated. "The authors thank N. G. Basov for continuous interest and L. A. Vaynshteyn for useful advice." Orig. art. has: 3 figures and 36 formulas. [02]

Card 1/2

ACCESSION NR: AP5010680

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 02Mar64 ENCL: 00 SUB CODE: EC

NO REF SOV: 005 OTHER: 005 ATD PRESS: 4003

Card 2/2

L 56479-65

ACCESSION NR: AP5015816 UR/0109/65/010/006/1140/1142
621.372.413

AUTHOR: Orayevskiy, A. N.; Shcheglov, [illegible] 7
8

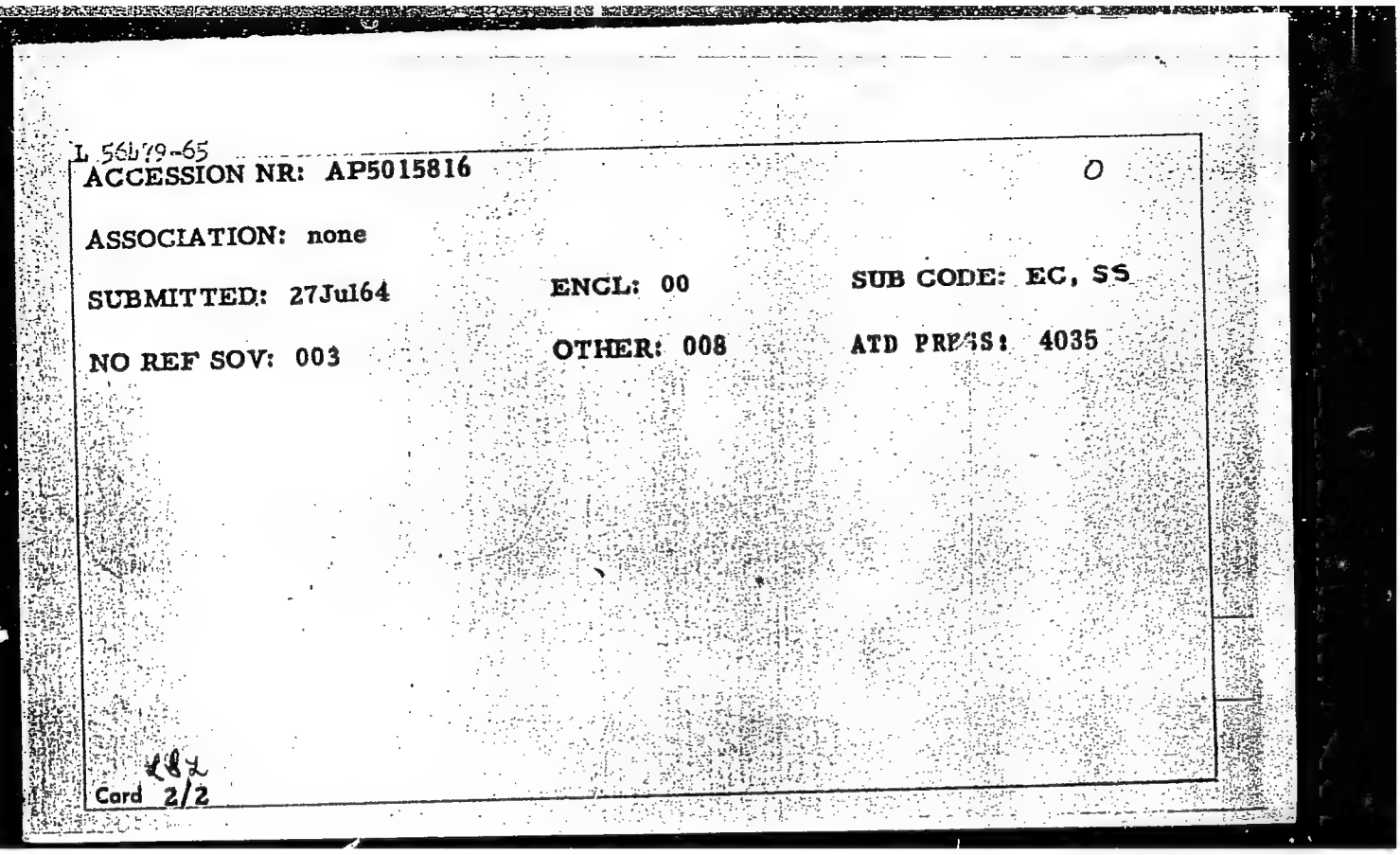
TITLE: Natural oscillations in dielectric resonators

SOURCE: Radiotekhnika i elektronika, v. 10, no. 6, 1965, 1140-1142

TOPIC TAGS: dielectric resonator

ABSTRACT: A theoretical investigation is reported of the number of natural modes in a specified spectral interval and the minimum relative optical density at which the crystal loses its resonator properties. The modes due to the total internal reflection are considered. The field of natural modes is represented after A. Okaya and L. F. Barash (Proc. IRE, 1962, v. 50, no. 10, 2081). It is found, for fixed geometrical parameters of the system, that the number of natural oscillators in a given frequency interval decreases with the relative optical density of the crystal. Orig. art. has: 1 figure and 8 formulas. [03]

Card 1/2



L 56679-65
ACCESSION NR: AP5015816 O

ASSOCIATION: none

SUBMITTED: 27Jul64 ENCL: 00 SUB CODE: EC, SS

NO REF SOV: 003 OTHER: 008 ATD PRESS: 4035

Card 2/2

L 2083-66 EWA(k)/FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/EWP(i)/EWP(j)/T/EWP(k)/EWA(m)-2/
ACC NR: AP5026590 EWA(h) SCTB/IJP(c) WG/RM/WH SOURCE CODE: UR/0056/65/049/004/1031/1037

AUTHOR: Borovich, B. L.; Zuyev, V. S.; Shcheglov, V. A.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Laser with a saturated Q-switch

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 4, 1965, 1031-1037

TOPIC TAGS: solid state laser, ruby laser, Q switching, passive switching, phthalocyanine

ABSTRACT: On the basis of rate equations an analysis is made of the kinetics of processes in a ruby laser where Q-modulation is accomplished by means of a saturated vanadium phthalocyanine solution in nitrobenzene. Two modes of excitation (soft and hard) are shown to exist. In the hard mode, the laser excitation threshold is determined by the parameters of the system. At amplitudes of the initiating signal in excess of the threshold, a pulse of standard amplitude and width is produced in the system. If spontaneous decay is neglected, the problem can be solved in quadratures. The condition for generation of a giant pulse and its maximal value are derived for this case. Two experiments were carried out with a ruby rod 120 mm long and 10 mm in diameter (see Fig. 1). In the first experiment, the end of the ruby rod

Card 1/3

L 2083-66

ACC NR: AP5026590

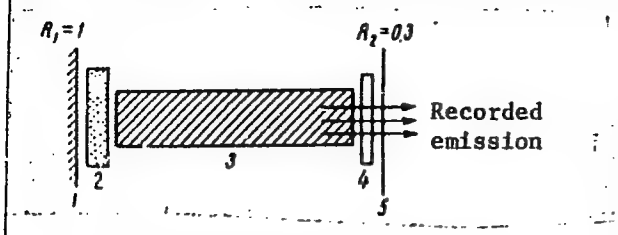


Fig. 1. Experimental setup

1 - 100% mirror; 2 - vessel containing phthalocyanine solution (5 mm thick, initial absorption 90%); 3 - ruby rod 120 mm long and 10 mm in diameter with opaque ends; 4 - plane parallel glass plate; 5 - 70% mirror.

was parallel with the mirrors (100 and 70% transparent). A giant pulse was generated when the pumping energy was sufficiently high to excite standard generation at the 30% mirror and the ruby end. A 10-nanosec 1-j pulse was emitted 300 μsec after the flashlamp firing. In the second experiment, the ruby was placed at a certain angle (∿0.5°) to the mirrors, and the plane-parallel glass disk (which maintains total resonator losses at the same level in both experiments) was removed. A considerable increase in pumping energy failed to yield standard generation. A 20—25 nanosec ∿1/15-j pulse was emitted after 400—600 usec. The experiments demonstrated that a considerable delay in the development of a giant pulse occurred during excitation without a starting pulse, and significant differences between the experimental values of pulse width and energy were apparent. The low energy yield in the second experiment was attributed to uneven pumping. The increased pulse width was explained in terms of two mechanisms, of which one, suggested earlier by R. W. Hellwarth (Quantum Electronics, Proc. of the 3rd Intern. Congress, ed. P. Grivel, N. Bloembergen, Dunod Editeur. Paris, Columbia Univ. Press, N. Y., 2, 1964, 1203), is due to cross-

Card 2/3

L 2083-66
ACC NR: AP5026590

relaxation of the R_1 lines in ruby and, partly, to relaxation between the $\bar{E}$ and $2\bar{A}$ levels. Orig. art. has: 7 figures and 11 formulas. [YK]

SUB CODE: EC/ SUBM DATE: 26Apr65/ ORIG REF: 002/ OTH REF: 004/ ATD PRESS: 4122

Card 3/3

L 35886-66 FBD/EWT(1)/EEC(k)-2/T/EWP(k) IJP(c) WG

ACC NR: AP6024516 SOURCE CODE: UR/0386/66/004/002/0061/0062

AUTHOR: Basov, N. G.; Orayevskiy, A. I.; and Shcheglov, V. A.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Beam laser for the infrared band

SOURCE: Zh eksper i teor fiz. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 2, 1966, 61-62

TOPIC TAGS: molecular generator, ir quantum generator, optic transition, laser pumping

ABSTRACT: The authors show that atom c- or molecular-beam masers, the development of which has hitherto been confined to the radio band, are also feasible for the infrared band and discuss briefly the possible molecular transitions that can be used to construct an ir laser with thermal pumping. Such a laser is based on a very simple idea: a highly heated beam of molecules is allowed to escape to a vacuum in which the equilibrium radiation is much smaller than $(E_\beta - E_\alpha)/k$ (E_β and E_α are two molecular levels, $E_\beta > E_\alpha$, whose radiative decay times satisfy the relation $\tau_\beta > \tau_\alpha$). Spontaneous emission soon depletes the α level and a state with population inversion can be produced for the $\beta \rightarrow \alpha$ transition. The necessary condition for the occurrence of pupulation inversion between the levels β and α is $\tau_\beta > (1 + \tau_{\beta\alpha}/\tau_\beta)\tau_\alpha$. The most convenient wavelength range for the proposed method is 3 - 20 μ. The suitable transitions for the CO_2 molecule are illustrated. Similar transitions can be obtained for N_2O and HCN. It is

Card 1/2

ACC NR: AP6036812 SOURCE CODE: UR/0368/66/005/005/0604/0608

AUTHOR: Zuyev, V. S.; Shcheglov, V. A.

ORG: none

TITLE: The propagation of a light pulse through a nonlinear absorbing medium

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 5, 1966, 604-608

TOPIC TAGS: nonlinear optics, optical filter, phthalocyanine, passive switching

ABSTRACT: The bleaching of a nonlinear optical filter and changes in the shape of a light pulse through it were studied theoretically for a phthalocyanine solution model represented as a two-level system. The case of the propagation of a Gaussian pulse through a medium in the ground state was considered. The effect of the pulse parameters on the degree of bleaching was observed. The results indicate that although the amplitude of the pulse decreases with the thickness of the medium, the pulse "wings" are clipped. As a result, the pulse energy decreases proportionately. The shape of the pulse through the medium becomes asymmetrical with time, and its interaction with the medium causes bleaching of the latter. The spontaneous decay is dominant and the

Card 1/2 UDC: 535.89

ACC NR: AP6036812

medium subsequently returns to its original state. A reduction in the pulse amplitude leads to deformation of both the pulse shape and bleaching curve, resulting in a decrease in the depth of bleaching. An increase in the lifetime of excited molecules τ also causes considerable pulse deformation. In the case of small τ, the pulse width at first narrows and then broadens, while the amplitude increases monotonically to its critical value. Orig. art. has: 3 figures and 14 formulas.

SUB CODE: 20/ SUBM DATE: 09Aug65/ ORIG REF: 005/ OTH REF: 006/
ATD PRESS: 5107

Card 2/2

ACC NR: AP6024470 SOURCE CODE: UR/0181/66/008/007/2087/2091

69
B

AUTHOR: Zakharov, Yu. P.; Nikitin, V. V.; Semenov, A. S.; Uspenskiy, A. V.; Shcheglov, V. A.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR (Fizicheskiy institut AN SSSR)

TITLE: The theory of optically coupled p-n GaAs lasers

SOURCE: Fizika tverdogo tela, v. 8, no. 7, 1966, 2087-2091

TOPIC TAGS: semiconductor laser, gallium arsenide, laser coupling, SOLID STATE LASER, PN JUNCTION

ABSTRACT: Using a slotted p-n GaAs diode as a model of a semiconductor laser, optical laser coupling was studied theoretically and experimentally. Eight different diodes, prepared by methods described by G. J. Lasher and F. Stern (Phys. Rev., 133, A553, 1964), with $0.2 \leq \gamma \leq 0.5$ were used ($\gamma = \frac{L_2}{L_1} \leq 1$, where L_1 and L_2 lengths of the p-n junction on each side of the slot). Spectral characteristics of each diode were observed for different values of the threshold injection currents (J_1 and J_2) through the slotted parts of a junction. Experimental results indicate that the function $k = \frac{J_1^{thresh}}{J_2^{thresh}}$ increases with an increase in γ ($k = \frac{\gamma}{1-\gamma}$). This result agrees essentially with the theory. Orig. art. has: 3 figures and 10 formulas. [YK]

SUB CODE: 20/ SUBM DATE: 10Dec65/ ORIG REF: 002/ OTH REF: 004/ ATD PRESS: 5042

Card 1/1

ACC NR: AP7001398 (A) SOURCE CODE: UR/0413/66/000/021/0074/0074

INVENTOR: Lebedev, V. K.; Yavorskiy, Yu. D.; Shcheglov, V. D.; Lozovskiy, V. P.; Novlyan, G. A.

ORG: none

TITLE: A method of spot or seam welding of laminated structures. Class 21, No. 187899 [announced by the Electric Welding Institute im. Ye. O. Paton (Institut electrosvarki)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 74

TOPIC TAGS: laminated metal structure, honeycomb structure, structure spot welding, structure seam welding, laminated material, spot welding

ABSTRACT: This Author Certificate introduces a method of spot or seam welding laminated, predominantly honeycomb, structures with the use of a current-conducting

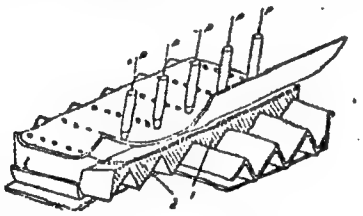


Fig. 1. Spots welding method

1 - Insert; 2 - insulation.

Card 1/2 UDC: 621.791.763-419

ACC NR: AP7001398

insert between the elements being welded. To improve the weld quality, the welding current is fed to only one element being welded (see Fig. 1), and the insert in the form of a comb is insulated from this element and is shifted as the welding of the elements progresses. Orig. art. has: 1 figure. [MS]

SUB CODE: 13/ SUBM DATE: 10Sep65/ ATD PRESS: 5110

Card 2/2

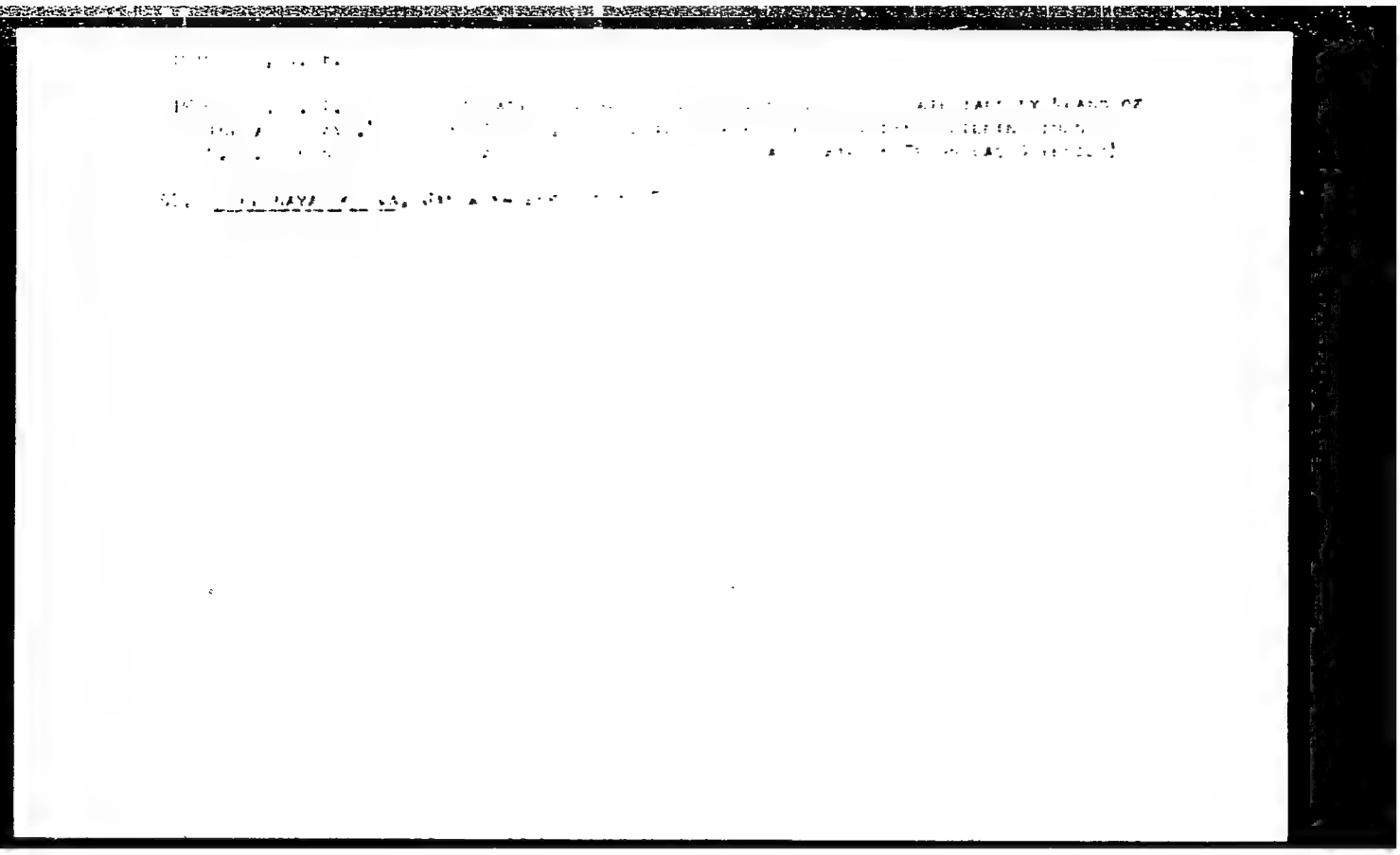
SHCHEGLOV, V. F.

Novyi besshabotnyi molot s razlichnymi massami soudariaiushchikhsia chastei. (Vestn. Mash., 1940, no. 6, p. 17-24)

(The new hammer without anvil block and with diverse bulks of colliding parts.)

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.



SHCHEGLOV, V.F., kandidat tekhnicheskikh nauk.

["Work of steam and air hammers] Rabota paro-vozduzhnykh molotov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1953. 251 p. (MLRA 6:8)
(Forging) (Hammers)

SHCHEGLOV, V.F., kandidat tekhnicheskikh nauk.

Control device parameters for steam and air swage hammers. [Trudy] TSNIITMASH no.58:105-172 '54. (MLRA 7:6)
(Power presses)

AID P - 3347

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 5/27

Author : Shcheglov, V. F., Kand. Tech. Sci.

Title : Operation of electric power stations on Bashkir coal

Periodical : Energetik, 9, 11-12, S 1955

Abstract : In this journal, No. 2, 1955, was published an article by G. M. Skol'nik and V. P. Sokolov, Engs.,: "Experience in burning Bashkir coal". The article resulted in several comments which the author summarizes. The problem of burning coals with a high degree of moisture is very important, because the exploitation of such coals has developed rapidly in recent times, and difficulties still exist in burning them efficiently. The author gives some data from two electric power plants and asks for more comments.

Institution : None

Submitted : No date

KAZOVSKIY, Lev Yevseyevich; SHCHEGLOV, V.F., kandidat tekhnicheskikh nauk, retsenzent; ROZANOV, B.V., kandidat tekhnicheskikh nauk, redaktor; MATVEYEVA, Ye.N., tekhnicheskiy redaktor

[Installation and adjustment of hydraulic presses] Montazh i naladka gidravlicheskikh pressov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 174 p. (MLRA 9:8)
(Hydraulic presses)

SOV/122-58-7-15/31

AUTHOR: Shcheglov, V.F., Candidate of Technical Sciences

TITLE: Design Parameters for Vibration Isolating Foundations for Forging Hammers (Vybor parametrov vibroizolyatsii fundamentov kuznechnykh molotov)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 7, pp 46-51 (USSR)

ABSTRACT. Apart from danger to structure and deleterious effects on work being performed in nearby machines, vibration from forging hammers affects people harmfully. Figure 1 shows the permissible amplitude of vibration, a (cm) in relation to frequency f in c.p.s. for normal human tolerance. Generally speaking, the amplitude must be reduced to less than 0.2 mm to avoid serious harmful effects. Isolating foundations may be either supporting or suspending. Figures 2, 3 and 4 show the former type and Figure 5 the latter. In the supported type and in the suspended arrangement, maintenance is facilitated if the spring mounts are located outside the perimeter of the inertial block on which the machine rests.
Considered as a system with one degree of freedom, the amplitude of vibration of the hammer itself can be found, with some simplifying assumptions from the formula:

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SOV/112-58-7-15/31

Design Parameters for Vibration Isolating Foundations for Forging Hammers

$$a \simeq \frac{v_y (1 + \varepsilon) G}{Q 2\pi f}$$

Where v_y is the speed (m/sec) of the falling top of the hammer of weight G (kg), f is the vibrational frequency of the anvil and inertial block system and ε the coefficient of recovery, Q the weight of the anvil and inertial block (kg). For drop hammers, v_y is about 7 m/sec and ε about 0.4; for forging hammers v_y = 6 m/sec and ε = 0.25. In both cases we get:

$$a \simeq \frac{1560}{Q/G f} \text{ mm}.$$

Figure 1 shows a graphical relationship between factors a, f, Q/G. Figure 14 shows also the effective damping coefficient η_B against f. This is based on the assumption that the natural frequency of a hammer based

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Design Parameters for Vibration Isolating Foundations for Forging Hammers

on soil without isolation is usually about 30 c.p.s., hence:

$$\eta_B = \frac{30 - f}{30} 100\% ,$$

The force acting on the foundations can be assessed as:

$$P_q = 6.3Gf \text{ kg}$$

for the conditions given above. In common practice, Q/G will vary between 80 and 120. Taking Q/G = 100, it will be found that:

$$f = \frac{15.6}{a} .$$

Using this formula, the relationships given in Table 2 can be established. This tabulates the weight of the falling tup, m (metric tons), frequency of the hammer and inertial block system f (c.p.s.) and amplitude of vibration a (mm) for both drop hammers (third column) and

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Design Parameters for Vibration Isolating Foundations for Forging Hammers

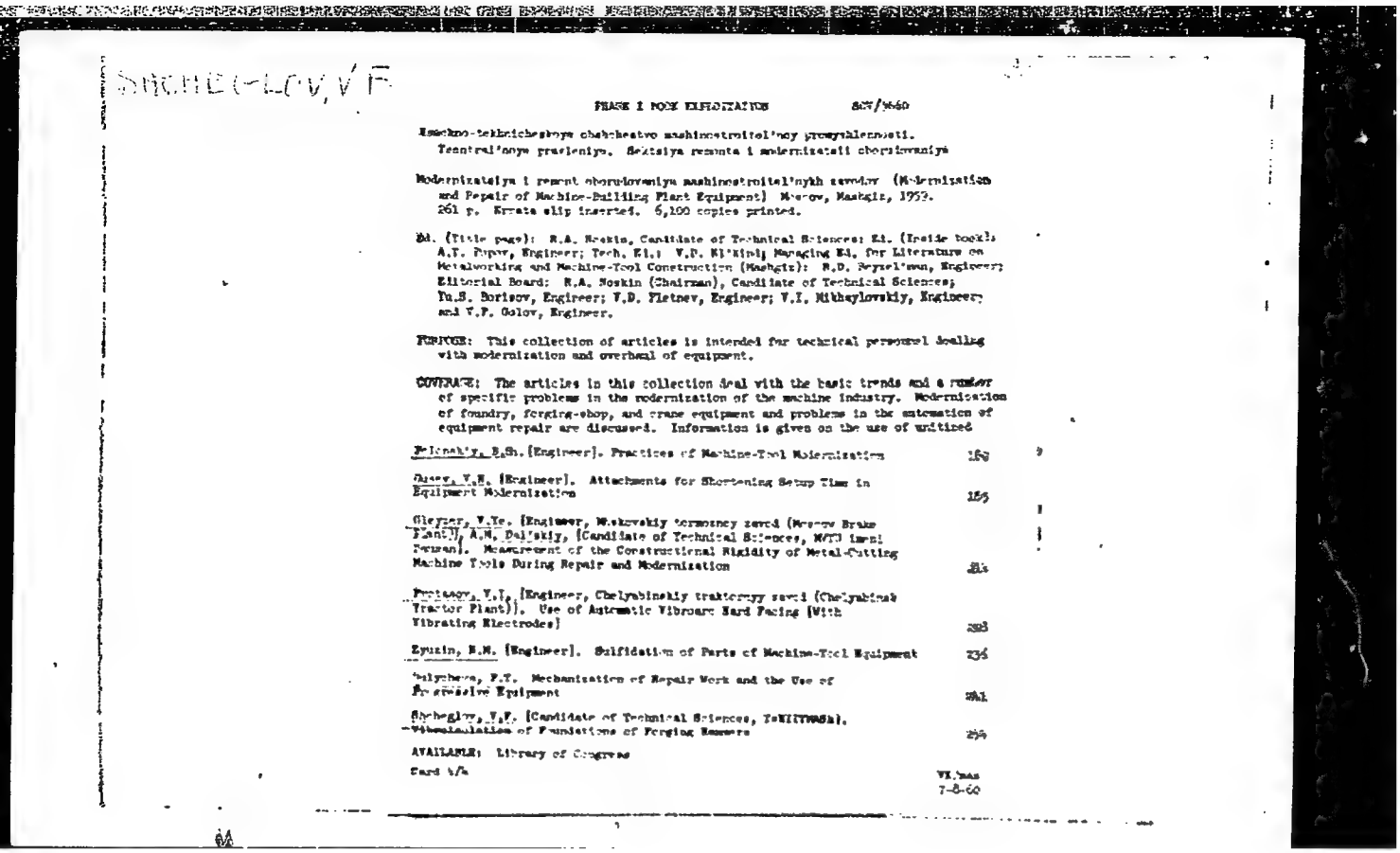
forging hammers (fourth column). These may be taken as normal parameters for design of the necessary isolating foundations to secure the limited vibration in the surrounding of the forging hammer, given earlier. Details are shown of various arrangements of springs for supported or suspended types of isolation. Table 1 gives dimensions, rates and maximum loads of various standard types of vehicle springs which are frequently used in these supports. Cork or rubber, having high internal friction absorb vibrations as well as isolate them and hammers with dynamic mass up to 1 ton are often supported entirely on such media. For heavier hammers, these materials are often combined with spring mountings. Elliptical leaf spring members are good vibration absorbers, due to friction between leaves and are often combined with coil spring mounts. The American "Corfund" self-damping sleeved spring system is shown in Figure 12 and a German system using viscous liquid damping in Figure 13. Dampers should be located as far as possible from the centre of gravity of the inertial system.

Card4/5

Design Parameters for Vibration Isolation Foundations for Forging Hammers

There are 14 figures, 2 tables and 5 references, 2 of which are Soviet, 2 German and 1 English.

Card 5/5



SHCHEGLOV, V.F.

PHASE I BOOK EXPLOITATION SOV/5660

Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Tsentral'noye pravleniye. Sektsiya remonta i modernizatsii oborudovaniya

Modernizatsiya i remont oborudovaniya mashinostroitel'nykh zavodov (Modernization and Repair of Machine-Building Plant Equipment) Moscow, Mashgiz, 1959. 261 p. Errata slip inserted. 6,100 copies printed.

Ed. (Title page): N.A. Noskin, Candidate of Technical Sciences; Ed. (Inside book): A.T. Popov, Engineer; Tech. Ed.: V.P. Mikhin; Managing Ed. for Literature on Metalworking and Machine-Tool Construction (Mashgiz): N.D. Zeyrel'man, Engineer; Editorial Board: N.A. Noskin (Chairman), Candidate of Technical Sciences; Yu.S. Borisov, Engineer; V.D. Fletnev, Engineer; V.I. Mikhaylovskiy, Engineer; and V.F. Golov, Engineer.

PURPOSE: This collection of articles is intended for technical personnel dealing with modernization and overhaul of equipment.

COVERAGE: The articles in this collection deal with the basic trends and a number of specific problems in the modernization of the machine industry. Modernization of foundry, forging-shop, and crane equipment and problems in the automation of equipment repair are discussed. Information is given on the use of unitized

AVAILABLE: Library of Congress

Card 1/4

VK/mas
7-8-60

SOV/21-59-1-3/26

AUTHORS: Didenko, V.T., Pankratov, G.M., Engineers and Shcheglov, V.P., Candidate of Technical Sciences

TITLE: Improving Fuel-Conveying Operations (Uluchsheniye raboty toplivo_podachi)

PERIODICAL: Energetik, 1959, Nr 1, pp 9 - 12 (USSR)

ABSTRACT: The technicians of the thermoelectric power plant at Yumertau introduced several changes in the coal supply system to eliminate the drawbacks of the very humid Bashkir coal. The changes elaborated by the plant, in cooperation with VTI, are listed and described. The heating system has been expanded to prevent coal freezing during the winter; all conveying belts have been equipped with textolite belt cleaners. Thus, both the reliability of the whole fuelling system was raised and personnel was reduced. The only difficulty remains the unloading of the frozen coal from BR trucks. There are 2 tables and 2 graphs.

Card 1/1

SHCHEGLOV, V.F.

Two-stage slime drying [with summary in English]. Inzh.-fiz.zhur. no.1:105-108 Ja.'59. (MIRA 12:1)

1. Vsesoyuznyy teplotekhnicheskiy institut im. F.Dzerzhinskogo, Moskva.
(Coal preparation) (Drying apparatus)

SOV/122-59-4-24/28

AUTHOR: Shcheglov, V.F., Candidate of Technical Sciences

TITLE: Service Experience and Improvement of Anvil-less Drop Forging Hammers (Opyt ekspluatatsii i usovershenstvovaniye besshabotnykh molotov)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 4, pp 81-85 (USSR)

ABSTRACT: Service experience with anvil-less drop forging hammers in Czechoslovak forging shops is described. Hammers with an impact energy between 2 and 40 ton metres are used, mostly of West German origin, but also from Hungarian and Czechoslovak sources. Pneumatic hammers of 300 - 750 kg capacity and steam-pneumatic hammers of 1 - 2 tons are used for preliminary forging. Hot rolled square or round section blanks are used with hammers of moderate power. A diesel crankshaft is forged by first forming under a 2 ton forging hammer, bending in an 1800 ton hydraulic press and drop forging under a 40 ton metre hammer. The flash is cut off in the 1800-ton press. Drop forging is accomplished after 45 blows with 3 heating up operations. Mineral oil with 7% graphite is used for die lubrication. The dies are made of 5 KhNM steel and for simple forgings have a

Card 1/4

Service Experience and Improvement of Anvil-less Drop Forging Hammers

service life of 2,500 components before regrinding. For complex components the tool life drops to 1200 pieces. 3 - 5 regrinding cycles can be applied. Most dies are mounted with a single wedge (as in the USSR) secured by a side key. German hammers have retained the two-wedge type of mounting (Fig 2). The sizes of mounting components are standardized in German drop hammers (Table 1). Anvil-less drop hammers with linkages between the upper and lower rams have a four-column design with 8 slideways. Most hammers operating in Czechoslovakia have rams linked with bands. The slideways are adjustable and taking the two rams together, 16 adjustments are needed which take about 8 hours. In practice, clearances cannot be reduced below 1 - 3 mm depending upon the hammer size. For precise matching of the two die halves, pins are used with a curved lead-in, leaving about 0.5 mm clearance per side. Die holders are used (Fig 5) for small dies. Some shops have succeeded in restoring worn ram faces by deposition welding. The rams are made of manganese

steel (type 30G). Using repair by deposition, the service life of rams reaches ten years. Some repair schemes used without deposition are illustrated (Figs 6 and 7). The band connections consist of stacked steel strips of 0.5 - 0.6 mm thickness each (cold rolled) made of 0.75% C steel (0.4% Mn and 0.3% Si) with a tensile strength of 130 - 160 kg/mm^2. The service life of steel bands is 3 - 4 months. After failure of individual strips, equivalent strips on the other side are removed. Failures are observed mainly at fixing points. The fixing holes are drilled when all strips are equally extended in a special fixture. Holes should not be blanked. Fixing bolts in lap joints with fittings have rounded-off crests in their threads. The dampers used in the band connections consist of alternating steel and rubber washers. The rubber has a Shore hardness of 53 and a tensile strength of 115 kg/cm^2. The dampers last one month. Other shops use harder rubber and achieve a life of two months. All-rubber dampers are sometimes used. Different designs of seals are in use (Fig 9 shows a seal design embodying an O-ring). U-seals are also used

Service Experience and Improvement of Anvil-less Drop Forging Hammers

for steam. Seals have endurance lives of up to two months. In order to eliminate the slideway adjustment and improve the service life of connections between rams, the TsNIITMASh Institute has carried out design and experimental work which led to the creation of several prototype anvil-less drop hammers of novel design (Fig 10). In this unit of 100 ton-metre energy, each ram is driven by its own steam-pneumatic cylinder provided with an individual control valve. The two valves are connected with a system of levers. The hammer is controlled by a single handle through a hydraulic amplifier. The layout of such a hammer with two slideways is shown in Fig 11. As made by the NKMZ Works, the hammer has a maximum ram velocity of 2.85 m/sec, a combined stroke of 2000 mm, a nominal rate of 35 blows per minute, a total height of 18.53 m and an overall weight of 815 tons.

There are 11 figures and 2 tables.

DIDENKO, V.V., inzh.; PANKRATOV, G.M., inzh.; SHCHEGLOV, V.F., kand. tekh.nauk

Improving the performance of feeding mechanisms. Energetik 7 no.1: 9-12 Ja '59. (MIRA 12:1)
(Boilers)

85551

S/182/60/000/009/009/012/XX
A161/A029

15200 also 2108

AUTHORS: Shcheglov, V.F.; Kurin, V.V.

TITLE: Investigation of Stamping Hammer Foundation Vibration Damping Under Shop Conditions

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 9, pp. 21 - 26

TEXT: Detailed engineering information is given on new vibration damping systems designed by three institutes (TsNIITMASh, TsNIISK and GIPROTIS) and tested under three 3-ton stamping hammers at Taganrogskiy kombaynovyy zavod (Taganrog Harvesting Combine Works). The first (installed in 1957) is of the suspension type with 12 spring dampers on suspension rods and 8 rubber dampers; the second (mounted in April 1959) supports the foundation block on 18 spring dampers and 14 rubber dampers standing on reinforced concrete bands in the foundation box. The damper design has been described by V.F. Shcheglov (in "Vestik mashinostroyeniya" No. 7, 1958). The third system is different in principle (hammer mounted in September 1959): the foundation block is suspended on 12 spring dampers and 4 pneumatic hangers, which accelerate the entire system hammer-foundation block upward at the down stroke of the ram. Four special dampers damp the vibration of

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M/122/60/000/011/012/020
A161/A127

AUTHOR: Shcheglov, V. F., Candidate of Technical Sciences

TITLE: New operational design method for forging hammers with after-impact forces absorbed within the system

PERIODICAL: Vestnik mashinostroyeniya, no. 11, 1960, 57 - 63

TEXT: The described hammer design is an attribute to the author's certificate No. 88336, dated 30 August 1950. The essence of the new work principle is the use of springs and pneumatic (or hydraulic) cylinders under the anvil bed that move the anvil upward to meet the ram. The article contains calculations proving that the system is balanced and the impact forces absorbed, and a detailed description of a test hammer built for experimental tests of the new forging method. It is mentioned that the pressure in the upper hammer cylinders must rise evenly to reach gradually the reaction pressure value, and that maximum piston effort at the start of work travel may be obtained by using slide valve ports of special shape with a flow passage having a gradually increasing cross section area during the upward motion of the bottom system to meet the blow. Small hammers (3 - 5 t) can work without such a special slide valve in the bottom

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New operational design methods for forging ...

cylinders, they can be connected with a by-pass pipe to the upper space in the work cylinder. The test hammer (Figure 3) has an anvil bed consisting of two parts, the upper part (1) with the anvil (2) rests on the bottom part (3) which is bolted to a reinforced concrete block (4). A rubberized fabric sheet (5) is laid between the anvil bed and the block. The protruding ends of the end beams cast into the concrete block rest on springs (6) for absorbing the vibration; the mid beams rest on the covers of pneumatic cylinders (7). The pneumatic cylinders communicate by pipes (8) either with the upper space in the work cylinder, or with a special slide valve that is controlled by the hammer control system. The following technical data of the test hammer are given: Rated stroke energy 800 kg, weight of the top mobile parts (ram and upper die) 350 kg; weight of the bottom mobile parts 12,600 kg, top and bottom mobile parts weight ratio 36, work stroke travel of the hammer 400 mm, travel of the top parts (rated) 389 mm, travel of the bottom parts (rated) 11 mm, anvil bed weight 4,600 kg, anvil bed/top mobile parts weight ratio 13, weight of the concrete block 4,000 kg, concrete block/top mobile parts weight ratio 11.4, total rigidity of springs 1,836 kg/cm. The operation was oscillographed (Figure 6). The operation causes practically no vibration in the surrounding ground. The dynamic forces acting on the ground are 6 to 12 times lower than those of hammers with conventional

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New operational design methods for forging ....

shock absorbing systems on foundations. The new system has been incorporated in industrial production for the first time at the Kombaynovyy zavod (Harvesting Combine Plant) at Taganrog. There are 6 figures.

Figure 3: Diagram of the experimental hammer set-up

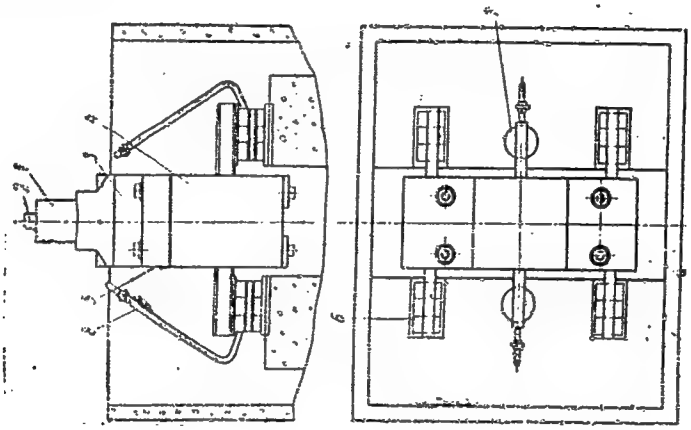

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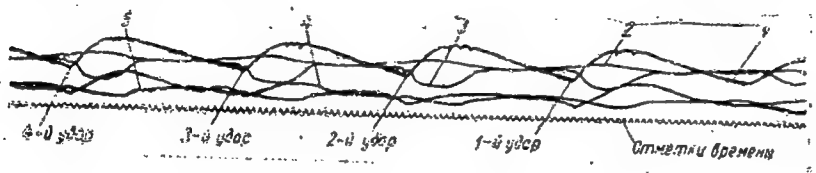
Figure 6: Oscillogram of four hammer strokes in sequence: 1 - ram travel; 2 - pressure in the upper hole of the working cylinder; 3 - pressure in the bottom hole of the working cylinder; 4 - travel of mobile bottom parts; 5 - pressure in the bottom cylinders (reversed record). 4th impact - 3rd impact - 2nd impact - 1st impact - time marks.



Card 4/4

SHCHEGLOV, V.F.

Shaking of the ground during the operations of forge hammers with a varying degree of vibration damping of their foundations. Kuz.-shtam. proizv. 2 no.8:23-27 Ag '60. (MIRA 14:2)
(Forging machinery—Vibration)

MIKHAYLOV, N.M.; LYKOV, M.V.; SHCHEGLOV, V.F.; KUROCHKIN, Yu.P.

Letter to the editor. Inzh.-fiz. zhur. no.3:159-161 Mr '60.
(MIRA 13:10)

1. Vsesoyuznyy teplotekhnicheskiy institut im. F.Dzerzhinskogo, Moskva.
(Drying apparatus)

45243

S/771/61/000/000/004/006

AUTHOR: Shcheglov, V. F., Candidate of Technical Sciences.

TITLE: Drop-forging equipment.

SOURCE: Sostoyaniye kuznechno-shtampovochnogo proizvodstva. Ed. by V. T. Meshcherin. Moscow, VINITI, 1961, 192-219.

TEXT: The paper surveys the world development of drop-forge hammers. The present abstract is limited to Soviet data reported. Free or open-die forging is meeting with effective competition from closed-die drop forging. Following a discussion of foreign progress in press and hammer development up to appx. 1956 and improvements in shock-absorbing foundations for drop hammers, the vibration-insulating suspension-type foundation of the 3-ton hammer of the SKMZ (Old Kramatorsk Machine Plant) is shown in a full-page cross-section. The installation was designed by the TsNIISK (Central Scientific Research Isntitute of Structural Parts of the Academy of Construction and Architecture, USSR), the TsNIITMash (Central Scientific Research Institute of Machine Technology), and the Giprotis (State Institute for Standard and Experimental Design and Planning and Technical Research). Foreign developments only are described relative to anvil-type hammers driven by steam-or-air, chain drive, and hydraulic pressure. Nonanvil-type hammers with two countermoving heads, in which all of the impact energy is absorbed without appreciable outward transmission and which, hence, need less weighty foundations, suffer from the requirement of tape, lever, or hydraulic connection between the two

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heads and numerous heavy vertical columnar and guiding members which render the manipulation of the billet very difficult. Much attention in the USSR has been centered on the development of large nonanvil hammers with an independent drive of the lower head. A cross-section of the general scheme of the TsNIITMash hammer is shown and explained. Preliminary testing of two industrial models has been performed. Total impact energy: 100,000 kgm; maximum impact speed: 2.85 m/sec; total stroke: 2,000 mm; design number of strokes: 35 per min; dimensions: Overall height 18.53 m, height above floor 10.4 m, length 7.5 m, width 4.21 m. The two columns (1.82 m apart) and the base plate are made of welded rolled metal plates. The upper head is connected to its rod through spring-type shock absorbers; the lower head is affixed on the shock absorber of the lower rod, which consists of a packet of steel disks. The design of the hammer permits removal of the heads without disassembly of the entire hammer. The heads may be locked in two vertical positions to facilitate inspection and replacement of the piston rings. The upper head may be gently lowered onto the lower head whenever the need for precision adjustments, e.g., to achieve precision matching of dies, makes this advisable. Single-handle control, equipped with various safety devices, is available. An indicator provides information of the impact position of the two heads at each stroke. A pneumatic key driver serves in locking the dies onto the heads. All handling of dies, billets, and forging is mechanized. Future trends of the development of hammer equipment. Free (open-die) forging: With the general tendency away

PHASE I BOOK EXPLOITATION SOV/5799

Unksov, Ye.P., Doctor of Technical Sciences, Professor, Ed.

Sovremennoye sostoyaniye kuznechno-shtampovochnogo proizvodstva (Present State of the Pressworking of Metals) [Moscow] Mashgiz, 1961. 434 p. 5000 copies printed.

Ed. of Publishing House: A.I. Sirotin; Tech. Ed.: B.I. Model'; Managing Ed. for Literature on the Hot Working of Metals: S.Ya. Golovin, Engineer.

Title: Kuznechno-shtampovochnoye proizvodstvo v SSSR (The Pressworking of Metals in the USSR) by: A.V. Altykis, D.I. Berezhkovskiy, V.F. Volkovitskiy, I.I. Girsh (deceased), L.D. Gol'man, S.P. Granovskiy, N.S. Dobrinskiy, A.I. Zimin, S. L. Zlotnikov, A.I. Kagalovskiy, P.V. Lobachev, V.N. Martynov, Ye.N. Moshnin, G.A. Navrotskiy, Ya.M. Okhrimenko, G.N. Rovinskiy, Ye.A. Stosha, Yu.L. Rozhdestvenskiy, N.V. Tikhomirov, Ye.P. Unksov, V.F. Shcheglov, and L.A. Shofman; Eds: Ye.P. Unksov, Doctor of Technical Sciences, Professor, and B.V. Rozanov.

Title: Kuznechno-shtampovochnoye proizvodstvo v ChSSR (The Pressworking of Metals in the Czechoslovak SR) by: S. Burda, F. Hrazdil, F. Drastík, F. Zlatohlávek

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Present State of the (Cont.) SOV/5799

Z. Kejval, V. Krauz, F. Kupka, F. Majer, K. Marvan, J. Novák, J. Odehnal, K. Paul, B. Sommer, M. Honz, J. Částka, V. Šindelář, and J. Šolc; Eds.: A. Nejepsa and M. Vlk.

PURPOSE: This book is intended for engineers and scientific personnel concerned with the pressworking of metals.

COVERAGE: Published jointly by Mashgiz and SNTL, the book discusses the present state of the pressworking of metals in the USSR and the Czechoslovak Socialist Republic. Chapters were written by both Soviet and Czechoslovak writers. No personalities are mentioned. There are 129 references: 98 Soviet, 16 English, 8 German, 5 Czech, and 2 French.

TABLE OF CONTENTS:

PRESSWORKING IN THE USSR

PRESSWORKING IN THE ChSSR

IVANOV, David Vasil'yevich; SHCHEGLOV, Valentin Fedorovich; RVANIN, Rostislav Vasil'yevich; USANOV, P.A., red.; KIMMEL', L.S., red. izd-va; SHIBKOVA, R.Ye., tekhn.red.

[Automation of sorting devices and bundle making machines for lumber] Avtomatizirovannye sortirovochnye ustroistva i paketoformiruiushchie mashiny dlia pilomaterialov. Moskva, Goslesbumizdat, 1963. 67 p. (MIRA 16:6)
(Lumbering--Machinery)

SHCHEGLOV, V.F.; AVTIN, I.V.

Methods of vibration proofing of heavy forging-hammer foundations. Kuz.-shtam. proizv. 5 no.9:20-26 S '63. (MIRA 16:11)

L 33266-65 EWT(d)/EWT(m)/EWA(d)/EWP(v)/EWP(t)/EWP(k)/EWP(h)/EWP(l)/EWA(c)

Pf-4 JD/HW

ACCESSION NR: AR5005708 S/0276/64/000/010/V004/V004

SOURCE: Ref. zh. Tekhnol. mashinostr. Sv. t., Abs. 10V23

AUTHOR: Rozanov, B.V.; Shofman, L.A.; Gol'man, L.D.; Maksimov, L.Yu.; Rozhkov, V.M.; Andreyev, A.S.; Shcheglov, V.F.; Tokarskiy, A.P.

TITLE: Development of powerful forging presses and new pressure metalworking methods

CITED SOURCE: Tr. Vses. no.-i. i proyektno-konstrukt. in-ta metallurg. mashinostr., sb. 12, 1964, 353-391

TOPIC TAGS: pressure metalworking, hydraulic press design, hammer design

TRANSLATION: The article surveys the activities of VNIIMETMASh from its inception. Described are designs of hydraulic presses and hammers developed at the Institute, as well as new technological processes for pressure metalworking (including hydrostatic techniques) Bibl. with 21 titles; 26 illustrations.

SUB CODE: IE, MM ENCL: 00

SHCHEGLOV, V.F., kand. tekhn. nauk

Standardization of drying units. Standartizatsiia 28 no.5:18-20 My '64. (MIRA 17:12)

ACC NR: AP6032530 SOURCE CODE: UR/0413/66/000/017/0131/0131

INVENTOR: Gusev, L. S.; Zimin, Yu. A.; Nistratov, A. F.; Pobedin, I. S.; Popov, A. K.; Rozanov, B. V.; Tokarskiy, A. P.; Kholin, Yu. T.; Tulyankin, F. V.; Shcheglov, V. F.; Yanovskiy, V. A.

ORG: none

TITLE: Drive of a high-speed counterblow hammer. Class 49, No. 185669 [announced by the All-Union Scientific Research Institute for the Planning and Design of Metallurgical Machinery (Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruktovskiy institut metallurgicheskogo mashinostroyeniya)

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 131

TOPIC TAGS: metal forming machine tool, forging machinery, metal press

ABSTRACT: This Author Certificate introduces a drive of a high-speed counterblow hammer, which includes a high-pressure cylinder and a piston with a sliding sealing bushing. To improve the operational characteristics and efficiency of the hammer, the bushing, placed in a lower part of the cylinder, has a circular groove inside, into which oil is pumped under pressure equal to that of the gas in the cylinder, thus forming a layer which serves the dual purpose of sealing and lubrication. Orig. art. has: 1 figure.

SUB CODE: 11, 13/ SUBM DATE: 22May64/

UDC: 621.974.4-92

Card 1/1

ACC NR: AP7001551 SOURCE CODE: UR/0020/66/171/003/0590/0592

AUTHOR: Fotiadi, E. E. (Corresponding member AN SSSR); Karatayev, G. I.; Shcheglov, V. I.

ORG: Institute of Geology and Geophysics, Siberian Department, Academy of Sciences SSSR (Institut geologii i geofiziki Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: On the theory of temporal perturbations of gravitational and magnetic fields in relation to recent tectonic and physical processes in the earth

SOURCE: AN SSSR. Doklady, v. 171, no. 3, 1966, 590-592

TOPIC TAGS: gravity perturbation, ~~magnetic perturbation~~, earth ~~structure~~, gravimetric analysis, magnetic anomaly, gravitation field, magnetic field, geophysical station, geophysical ~~polygon/Siberian~~ research facility, tectonics

ABSTRACT: Although the geophysical station network in Siberia includes several stations at which periodic (every 2—3 yrs) observations are made of geophysical fields, leveling, triangulation, etc., and other station at which continuous measurements are made of the time-wise variations in the earth's gravity and magnetic fields and tilts of the earth's surface, no provision has been made for simultaneous measurements of both gravitation and magnetic fields. The authors report on some theoretical investigations of the connection between the temporal variations of the gravitational and magnetic fields and the time-dependent variation of the shape, density, and magnetization of various perturbing bodies. The analysis includes both the direct problem (determination of an analytic expression for the potential as a

Card 1/2 UDC: 550.312

ACC NR: AP7001551

function of coordinates and time for a given density of magnetization and for a given configuration of the anomaly) and the inverse problem (determined from specified variations of the potential the temporal field of the density or magnetization and the configuration of the anomaly). Solutions of the direct problem are presented for the case of a circularly-distributed force applied to the plane boundary of an elastic half-space, and for a certain anomalous mass along a vertical hollow cylinder. Possible future applications of the analysis and some still unresolved problems are briefly outlined. Orig. art. has: 11 formulas. [02]

SUB CODE: 08/ SUBM DATE: 23Aug66/ ATD PRESS: 5117

Card 2/2

SHCHEGLOV, V.I.; SHEVELEV, P.G.

Unit-cast grooves for piercing mills. Sbor.rats.predl.vnedr.v proizv. no.5:30 '60. (MIRA 14:8)

1. Azerbaydzhanskiy truboprokatnyy zavod.
(Pipe mills)

SEMIKOV, T.T., kand. tekhn. nauk; SHCHEGLEV, V.I., kand. tekhn. nauk;
DEMIN, I.D.

Modern radar equipment in marine navigation. Inform. sbor.
TSNIIMF no. 120. Sudovozh. i sviaz' no. 27:3-14 '64
(MIRA 19:1)

SHCHEGLOV, V. N.

Peat Industry

Hourly production check in peat transportation.
Torf. prom. 29 No. 19, 1952.

Monthly List of Russian Accessions, Library of Congress,
December, 1952. UNCLASSIFIED.

PHASE I BOOK EXPLOITATION

Vodolagin, Mikhail Aleksandrovich, and Shcheglov, Vyacheslav Nikolayevich

Metallurgicheskiy zavod "Krasnyy Oktyabr'" (Metallurgical Plant "Krasnyy Oktyabr'") Moscow, Metallurgizdat, 1957. 223 p. 2,000 copies printed.

Reviewer: Komov, V. M.; Ed.: Avrutskaya, R. F.; Tech. Ed.: Islent'yeva, P. G.

PURPOSE: The book is addressed to workers in the metallurgical industry to acquaint them with the development and achievements of the "Krasnyy Oktyabr'" Metallurgical plant. It also is intended for the general reader.

COVERAGE: The book describes the various aspects and phases in the growth and development of the "Krasnyy Oktyabr'" plant, a producer of high-quality steel.

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Metallurgical Plant "Krasnyy Oktyabr'" 440

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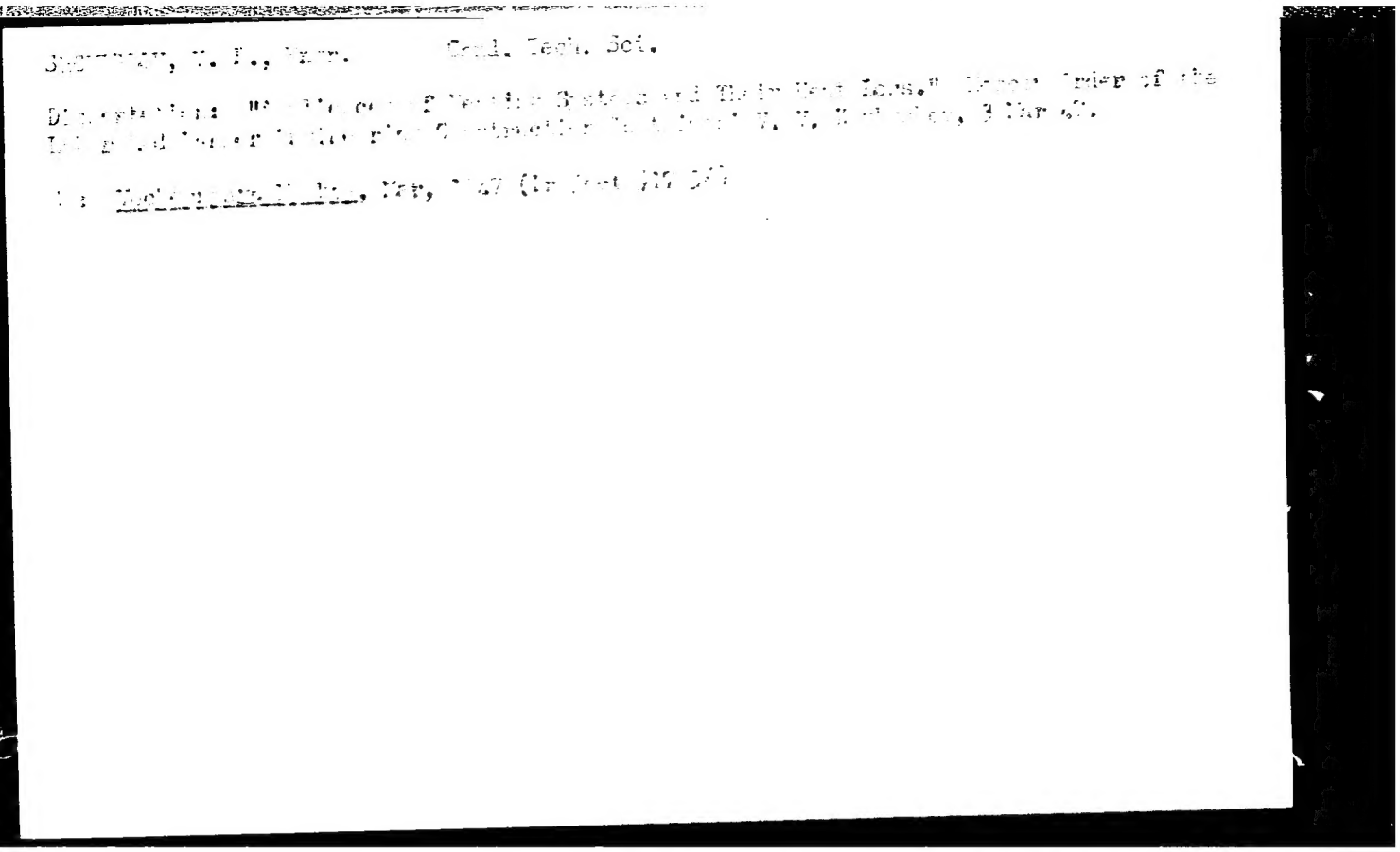

Sherman, T. F., Trans. Gerl. Tech. Sci.

Dissertation: "[illegible] of Variable Systems and Their Very Long," Report [illegible] of the [illegible] Power [illegible], Moscow, 3 Mar 47.

1 : Mat'matika, Mos., Mar, 1947 (In Rus) [illegible]